

LOW NO_x DUCT BURNER

ABSTRACT OF THE DISCLOSURE

Embodiments of the present invention are directed to a low NO_x duct burner or heater for efficiently heating turbine exhaust gases (TEG) in a less polluting manner. In one embodiment, a heater for heating a gaseous stream flowing in a downstream direction through a duct comprises a heating gas supply pipe extending at least partially across the duct. The heating gas supply pipe includes a plurality of spaced-apart gas pipe outlets to discharge a portion of a heating gas into the duct generally in the downstream direction. A flame shield extends from a location at or near the heating gas supply pipe at least partially across the duct. A plurality of gas supply spuds are disposed upstream of the flame shield. The gas supply spuds include a plurality of gas spud outlets to discharge another portion of the heating gas into the duct. A plurality of jet pumps each extend from a jet pump inlet at an upstream location upstream of the flame shield to a jet pump outlet at a downstream location downstream of the flame shield. Each jet pump inlet is disposed near one of the gas spud outlets to receive the heating gas from the gas spud outlet and the duct gas from the gaseous stream for premixing of the heating gas and the duct gas in the jet pump.

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